



Jm *AF*

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of

CURDY et al

Atty. Ref.: 2590-152

Appl. No. 10574003 (4067)

TC/A.U. 1791

Filed: September 29, 2006

Examiner: Ninh V. Le

For: DEVICE AND METHOD FOR MAKING PARTICLES

* * * * *

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

April 4, 2011

REPLY BRIEF

Appellant hereby responds to the new issues raised in the Examiner's

Answer.

First, from the middle of page 7 to the top of page 8 of the Examiner's Answer, the Examiner disagrees with the following factual statements in the Appeal Brief and tries to improperly argue that the Board may ignore the context of the claimed invention and may ignore the context of Muller when conducting an obviousness analysis. As factually stated on page 11 in the Appeal Brief,

It is important to note that the applicants' claimed invention is specifically directed to "a device for the continuous manufacture of microparticles or nanoparticles from at least one

aqueous phase and one organic phase.” In contrast, Muller does not concern or even relate to the manufacture of microparticles or nanoparticles. Instead, Muller concerns a device that produces homogeneous fibrets from spinning horizontal nozzles, i.e., fibers having a very small diameter and a very high surface area per unit mass. See Muller at column 1, lines 9-10. Muller's fibrets are used for forming fiber networks or agglomerates such as in depth filters for liquid filtration or in webs for air filtration. See Muller at column 1, lines 24-40. Muller's device that uses a particular "star shaped" cluster of horizontal nozzles 46, 47, 48, 49 (column 9, line 50, and Figures 2-3) and Muller's fibret technology are quite different than the claimed invention that concerns a device for the continuous manufacture of microparticles or nanoparticles.

The foregoing facts cannot be ignored. Indeed, those facts are the reason for applicant's claimed apparatus¹ (i.e., for the continuous manufacture of microparticles or nanoparticles), and those facts are the reason for Muller's different apparatus² (i.e., for producing Muller's homogeneous fibrets). Applicant is not aware of any U.S. statutory law or case law that allows the Examiner's type

¹ The claimed apparatus must include:

- a. side walls of the homogenization compartment are positioned along a vertical plane,
- b. axis of symmetry of the cylindrical homogenization compartment is positioned horizontally,
- c. the rotor is installed so that it rotates about a horizontal axis, and
- d. the homogenization compartment has an outlet on the top side.

² Muller's apparatus only shows:

- a. sides that are horizontal,
- b. an axis of symmetry that is vertical,
- c. a rotor that rotates around a vertical axis, and
- d. an outlet on the left side.

of blind analysis and the fact that there is no motivation to tip Muller's device on its side. Indeed, the entire prior art reference must be considered and interpreted in its proper context in an obviousness analysis, and the applicant's preamble helps understand the context of the claimed invention during an obviousness analysis.

The Examiner is trying to modify Muller's configuration in order to arrive at the claimed invention, and such a modification of Muller's configuration (including turning Muller's device on its side) would destroy the intended purpose of Muller. The Examiner's modifications would render the Muller device defective for Muller's intended purpose of producing consistent, high quality fibrets. Respectfully stated, this is clear evidence of improper hindsight reasoning by the Examiner.

Second, on pages 9-11 of the Examiner's Answer, the Examiner makes a number of illogical and unfounded assumptions about how Muller can be modified to arrive at the claimed invention. The Examiner's Answer says that Muller is "silent" with respect to applicant's four distinguishing claim features. The Examiner's Answer is incorrect. Indeed, Muller is explicit in its disclosure of its device – Muller is not silent. Muller explicitly discloses its device in Figures 2 and 3. Those explicit disclosures teach away from the claimed invention – as set forth in detail in the Appeal Brief on pages 12-15. Attached is another copy of those

pages, along with annotated Muller Figures 2 and 3, with added reference numbers 40a, 41a, and 41b.

Again, applicant notes that U.S. patent law does not permit the Examiner to ignore Muller's intended purpose and Muller's particular configuration in Figures 2 and 3 for achieving that purpose. Just like there is no legitimate reason to turn an automobile on its side, there is no legitimate reason to turn Muller's apparatus on its side (90 degrees).

The Examiner's Answer also contends that applicant's claimed critical features are not critical because they were not in the U.S. application claims from the outset. First, there is no U.S. patent law that says critical claim limitations relied upon to overcome cited art must be present in the claims from the outset. Second, each of the critical distinguishing claim features³ relied upon by the applicant HAVE BEEN in the U.S. application from the filing date of the U.S. application. See the "original" claim 1 in the Preliminary Amendment filed with the U.S. application on March 29, 2006.

³ (1) side walls of the homogenization compartment are positioned along a vertical plane,
(2) axis of symmetry of the cylindrical homogenization compartment is positioned horizontally,
(3) the rotor is installed so that it rotates about a horizontal axis, and
(4) the homogenization compartment has an outlet on the top side.

Third, on page 13 of the Examiner's Answer, the Examiner questions whether the Examiner's proposed re-orientation of Muller would defeat the intended purpose of Muller. The Examiner's Answer states, "appellant has failed to show why rotating the configuration of [the] Muller device would create inconsistent/problematic fibrets." Indeed, appellant has shown "why rotating the configuration of [the] Muller device would create inconsistent/problematic fibrets." In this regard, attention is directed to the facts and calculations on pages 16-19 of the Appeal Brief that confirm Muller's device tipped 90 degrees onto its side would create inconsistent/problematic fibrets. The Examiner has not rebutted these facts of non-obviousness.

Fourth, at the top of page 14 of the Examiner's Answer, the Examiner attempts to dispute the factual calculations and refers to the coagulation bath supply line (9) of Muller along with other information. Applicant disputes the Examiner's contentions and notes that a proper reading of Muller and the calculations in applicant's Appeal Brief are logical, correct, and have not been refuted. They confirm that the Examiner's rearrangement of Muller would render the Muller device defective for its intended purpose of producing homogeneous fibrets. It clearly appears from Muller that symmetry and homogeneity is desired in all flows, i.e., coagulation flow and dope flow. For conditions to be

homogeneous, both the feed line for dope and that for coagulant are central.

Applicant respectfully submits that a person of skill in the art would clearly understand that identical conditions "at all nozzles" apply both for coagulation and dope feeds.

Fifth, at the bottom of page 14 of the Examiner's Answer, the Examiner contends that Muller's nozzles must have holes and therefore applicant's "perforations" claim 4 is obvious when interpreting the wording in the most broad and reasonable manner. Applicant disagrees.

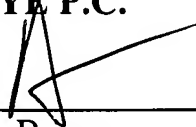
The Muller reference must be read in the proper context, and, when reading Muller in the proper context, Muller does not disclose or suggest the claimed perforations in combination with the independent claim 1 features. The claimed first inlet "perforations" are quite different than Muller's specifically designed star-shaped nozzles 46, 47, 48, and 49 that extend "radially outward." See Muller at column 9, lines 50-51. No one skilled in the art would view the applicant's "perforations" in its device to be the same as or an obvious variant of Muller's specifically designed star-shaped nozzles that extend "radially outward" from Muller's different apparatus. Consequently, Muller does not disclose or suggest the applicant's claim 4 invention.

For at least the reasons identified in the Appeal Brief and this Reply Brief, applicant respectfully requests the Board to reverse the final rejections and pass the subject application to issue.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: /Duane M. Byers/

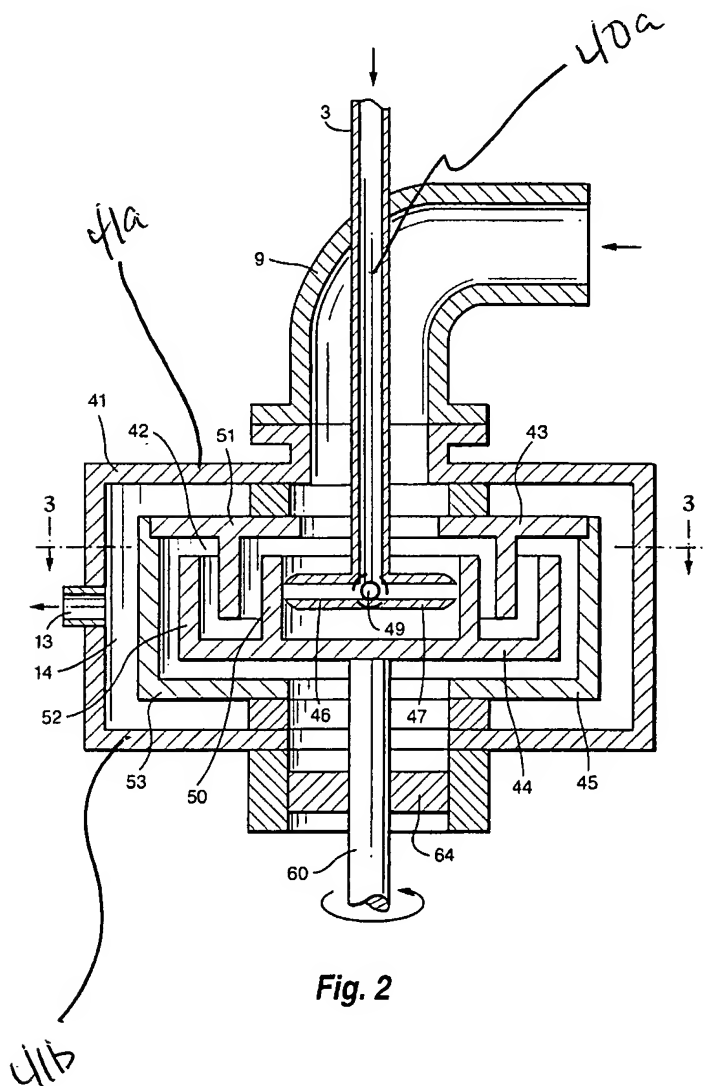


Duane M. Byers
Reg. No. 33,363

DMB:lmo
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: 703-816-4000

and Muller's fibret technology are quite different than the claimed invention that concerns a device for the continuous manufacture of microparticles or nanoparticles.

Muller's device is depicted in Figures 2 and 3 below. Muller's Figures 2 and 3 show the **critical orientation** of Muller's features – which teach away from the applicant's claimed features.



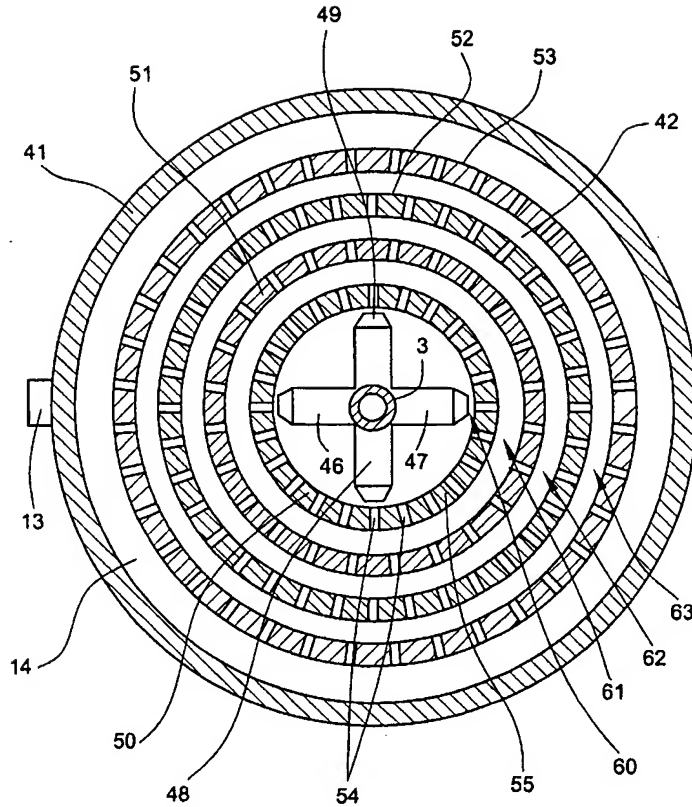


Fig. 3

With the foregoing summary information in mind, applicant now discusses the details. Applicant's claimed invention requires the following specific features and orientations that are not disclosed or suggested by Muller.

1. Applicants' claim 1 requires "a homogenization compartment in the form of a cylinder...wherein...said side walls are positioned along a vertical plane." See applicant's Figure 3 above and the vertical side walls designated as 8 and 8a. In contrast, the side walls of the Muller "compartment" are not vertical. In fact, Muller's sides designated as 41a and 41b in Muller's Figure 2 above are

horizontal and therefore teach away from the applicants' claimed invention that critically requires that applicants' "side walls are positioned along a **vertical** plane." Moreover, Muller's device would not be turned 90 degrees because then it would not function properly to expel its fibrets **horizontally** out from its rotating "star-shaped" nozzles 46, 47, 48, and 49 depicted in Figures 2 and 3 of Muller and described in column 9, lines 47-51 of Muller. Indeed, Muller specifically states that its "nozzles extend radially **outward**." Column 9, lines 50-51. Muller discloses no other configuration to make its specific type of fibrets. Thus, Muller does not disclose or suggest the claimed invention.

2. Applicants' claimed invention requires a "homogenization compartment in the form of a cylinder...wherein...the axis of symmetry of said cylinder is positioned **horizontally**." See reference number 4a in applicant's Figure 3 above. Muller does not disclose or suggest this feature. In fact, Muller teaches away from this critical feature of the claimed invention. In this regard, Muller's axis of symmetry of its cylinder is **vertical**. See reference number 40a in Muller's Figure 2 above. This contrary teaching of Muller cannot be ignored. Muller discloses no other configuration to make its specific type of fibrets. Thus, Muller does not disclose or suggest the claimed invention.

3. Applicants' claimed invention requires that "the rotor is installed so that it rotates about a **horizontal** axis which passes through said second side wall."

See reference number 4a in applicant's Figure 3 above. Muller does not disclose or suggest this claim feature. In fact, in Muller, the rotor moves around a **vertical** axis. See reference number 40a in Muller's Figure 2 above. Thus, Muller teaches away from the claimed invention.

4. Applicant's claimed invention requires that "the homogenization compartment exhibits a **top [horizontal] side on which said outlet is situated.**" See reference number 5 in applicant's Figures 3 and 7 above. In contrast, Muller's outlet is on the **left vertical** side of its device. See reference number 13 in Muller's Figure 2 above. Again, this teaches away from the claimed invention.

For at least the foregoing reasons, the rejection fails to set forth a prima facie case of obviousness.

The Examiner's position appears to be that one skilled in the art would turn Muller's Figure 2 device 90 degrees and arrive at applicant's claim 1 invention.

However, applicant submits that:

- i) one skilled in the microparticles and nanoparticles art would not resort to Muller's "fibrets" invention - which was not successful, e.g., the Muller patent expired due to non-payment of maintenance fees, and
- ii) Muller specifically teaches that its device must be used in the non-rotated position. No where does Muller teach or suggest that its device can be rotated 90 degrees. Indeed, the Muller device's rotation by 90 degrees would prevent the device from functioning properly to make the Muller "fibrets" that are supposed to be horizontally